

**THE DRIVING MECHANISM OF PROACTIVE
CORPORATE ENVIRONMENTAL MANAGEMENT
AMONG ISO 14001 CERTIFIED COMPANIES IN
MALAYSIA**

by

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DEDICATION

....to my beloved family

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ABSTRAK

Disebabkan pertumbuhan pesat industri di Malaysia, pengurusan alam sekitar korporat memainkan peranan yang semakin penting. Hal ini demikian kerana masalah alam sekitar global menjadi lebih jelas dan serius. Korporat telah menjadi lebih proaktif dalam pengurusan alam sekitar dan menjaga alam sekitar dengan lebih serius dan secara sukarela, bukan hanya mematuhi undang-undang dan peraturan kerajaan. Walau bagaimanapun, kurang kajian yang meneroka motivasi untuk strategi proaktif alam sekitar terutamanya bagi negara-negara sedang membangun seperti Malaysia dapat dicari. Oleh itu, objektif kajian ini adalah untuk memeriksa faktor dalaman dan luaran yang mendorong keputusan firma untuk mengamalkan pengurusan alam sekitar korporat yang proaktif (CEM) dan juga mengkaji tahap pengurusan alam sekitar yang proaktif bagi syarikat-syarikat korporat di Malaysia. Di samping itu, kajian ini akan meneliti sama ada sifat-sifat atau ciri-ciri firma mempunyai kesan ke atas pengurusan alam sekitar korporat yang proaktif. Soal selidik berstruktur telah digunakan untuk menentukan factor yang mendorong pengurusan alam sekitar proaktif dan kaji selidik dilakukan di kalangan ISO 14000 firma-firma yang disahkan di Malaysia.

Data telah dikumpulkan daripada 87 syarikat dan dianalisis dengan menggunakan 'Predictive Analytics SoftWare (PASW)' Perisian Analytics Ramalan versi 18. Hasilnya menunjukkan bahawa di kalangan responden, 58.6% adalah mengamalkan kesemua enam kategori pengurusan alam sekitar proaktif. Dari kajian, tekanan paksaan, motivasi etika, keupayaan pembelajaran, saiz firma, status pemilikan firma dan jenis industri telah didapati mempunyai hubungan yang positif dengan pengurusan alam sekitar korporat yang proaktif, manakala umur firma, tekanan normatif, tekanan meniru, sikap pengurusan dan peluang ekonomi didapati tiada berkaitan dengan pengurusan alam sekitar korporat yang proaktif.

ABSTRACT

Due to the rapid growth of industry in Malaysia, corporate environment management become increasingly important as more global environmental problem becomes more obvious and serious. Businesses have to be more proactive in environmental management and voluntarily take environmental concern seriously, not just complying with the government law and regulation. However, there are relatively few studies exploring the motivation for proactive environmental strategy especially for developing countries like Malaysia. Therefore, the objective of this study is to examine the internal and external drivers that motivate a firm's decision to adopt a proactive corporate environmental management (CEM) and also the current proactive corporate environmental management level for the corporate firms based in Malaysia. In addition, this study will examine whether the firm attributes or characteristics have an effect on the proactive corporate environmental management. A structured questionnaire was used to determine the drivers for proactive CEM and the survey was done among a group of ISO 14000 certified firms in Malaysia.

The data was collected from 87 respondent and analyzed using Predictive Analytics SoftWare (PASW) statistics software version 18. The result shows that among the respondent, 58.6% is practicing all the six categorized type of practicing environmental management. From the study, coercive pressure, ethical motivation, learning capacity, firm size, firm ownership status and type of industry was found to have a positive relationship with proactive corporate environmental management, while firm age, normative pressure, mimetic pressure, managerial attitudes and economic opportunities are not found to be related to proactive corporate environmental management.

CHAPTER 1 INTRODUCTION

1.1 Introduction

The research outline of the study is introduced in this chapter. Firstly, the background of the study is being highlighted, followed by the purposed and justification of the study, significance of the study, problem statement, research questions and research objectives. In order to help the reader in understanding this research report, the definition of the key term used in this thesis will be provided. Lastly, the organization of the remaining chapter will be given for a brief overview.

1.2 Background of The Study

Although the Copenhagen Conference on climate changes which was held on 2009 was not successful, it had created and increased the attention of the public especially the environmentalists towards the worsening environmental issues. The increasing concern on the public and government regarding environmental issue has called for the corporate sector to be more aware and become accustomed to this issue. This is very important as corporate company is one of the major sources of global environmental problems and attention must be given in managing the environment for each corporation especially corporate company that involved in heavy industry.

Nowadays, corporate firms become more aware of the importance of environmental management. Previously, the environmental management of corporate is only based on the traditional regulation pressure, which is a reactive mode. However, due to the increase in attention and awareness of global environmental issue, the corporate environmental management has been transformed to a more proactive approach, which is self-regulation or voluntary practice

of environmental strategy that involves internal organization motivation and management practices and also public participation, leading to a sustainable competitive advantage.

There are various explanations and descriptions by different author regarding CEM as indicated below:

- Environmental management is the improvement and planning of the organizational structure and their systems and activities in order to define a certain type of posture relative to the environmental variable (McCloskey & Maddock, 1994)
- Environmental management is a set of activities that are designed to develop products, productive processes and strategies that prevent the emergence of environmental impacts as a result of company activities (Richards, 1997)
- Green management is the organization-wide process of applying innovation to achieve sustainability, waste reduction, social responsibility, and a competitive advantage via continuous learning and development and by embracing environmental goals and strategies that are fully integrated with the goals and strategies of the organization (Haden, Oyler, & Humphreys, 2009)

Although there are different descriptions of CEM, all of the definition involves a systematic approach of environmental strategies towards environmental issue at the entire organizational level.

There were a few criteria determining the proactive corporate environmental management of a particular firm, such as the ISO 14001 certification, cleaner production audit, recycle of byproduct, eco-technical innovation, disclosure of environmental information and environmental cooperation with external suppliers (Liu et al., 2010).

1.3 Purpose and Justification of the study

The main purpose of this study is to investigate the level of proactive corporate environmental management in Malaysia and the drivers that influence the proactive corporate environmental management. The motivation of the study is that in Malaysia, environmental problem has become a highlighted issue as a result of the rapid growth in industrialization and urbanization. However, it is still unclear to what extent the environmental management in Malaysia's firm can be further improved when there is a further amendment of environmental policy and it is interested to know what are the main drivers that a corporate company needs to put more attention on when they intend to work out a better and proactive corporate environmental strategy to enhance sustainable competitive advantages.

Most of the studies were conducted in developed countries and there are limited studies exploring the motivation for proactive strategy especially for those developing countries like Malaysia. Therefore, this study provides preliminary insight on the determinant for Malaysian corporate to adopt proactive environmental management.

1.4 Significance of the Study (Theoretical and Practical Contribution)

The findings from this research can be a very useful source for government and policy makers to develop a successful strategy on promoting sustainable environment management among Malaysian firm, for example, they will know the level of proactive corporate environmental management in Malaysia and what are the areas and drivers that need to be emphasized in order to have a better environmental performance among companies in Malaysia. This study can also play an important role for firms in their decision making for the proactive corporate environmental management on what aspect they need to be considered to increase the

successful rate of environmental strategy implementation. This study was also aim to highlight the importance of the environmental issue to the public and practitioners.

1.5 Problem Statement

Nowadays, society tends to be more aware on the environmental problems. We can know from the media that the adoption of green policy or environmental management systems is increasing among both multinational and domestic countries around the world. Many companies follow the industry certificate and guidelines such as ISO 14000. The main problem is although many companies claimed that they are practicing green, there is not much study to show that the companies are voluntarily or proactively undertake actions to improve their environmental performance in all aspect of their operations, not just comply with the rules. The amount of pollution that we have today, especially from the industry shows that there is still lack of environmental consciousness among the society and also the firms, the knowledge and awareness of the society on the environmental issue is still limited.

Researches in the area of proactive corporate environmental management are lacking in Malaysia and this is important because it shows voluntary of an organization to adopt environmental practices which will eventually contribute a lot to our environment for a sustainable tomorrow.

The results obtained from previous studies also shown that firms attributes, such as industry sector, plant size, experience level of the firm and ownership status would have an effect on corporate environmental management (Zhang et al., 2008; Dasgupta, Hettige & Wheeler, 1997; Arora & Cason, 1996). However, research done in China has showed

inconsistent findings, whereby the above firms attributes was not significant to corporate environmental management. (Liu et al., 2010). Therefore this study is deserved to be undertaken.

1.6 Research Objectives

This study attempts to accomplish the below objectives

- To determine the level of proactive corporate environmental management of the ISO 14001 certified firms in Malaysia.
- To determine the external factors (coercive pressure, normative pressure and mimetic pressure) that motivate proactive corporate environmental management
- To determine the internal factors (managerial attitudes, economic opportunities, ethical motivation and learning capacity) that motivate proactive corporate environmental management.
- To examine whether there is a relationship between firms attributes (firm ownership status, firm age, firm size and type of industrial sector) and the proactive corporate environmental management.

1.7 Research Questions

In order to achieve the above objectives, this study tries to answer the following research questions:

- 1 What is the level of proactive corporate environmental management among the ISO 14001 certified company in Malaysia?

- 2 Do the external institutional pressures of a firm such as coercive, mimetic and normative pressure affect the level of proactive corporate environmental management in Malaysia?
- 3 How do the internal organization factors, such as managerial attitudes, economic opportunities, ethical motivation and learning capacity can affect the proactive corporate environmental management performance in Malaysia?
- 4 What is the relationship between firms attributes (firm size, firm age, firm ownership status and type of industrial sector) and the proactive corporate environmental management.

1.8 Definition of Key Term

The following key terms were explained for the better understanding of the future discussion in this paper.

1) ISO 14001

ISO 14001 provides the requirements for an environmental management system (EMS). It is a management tool enabling an organization to identify and control the environmental impact of its activities, products or services, to improve its environmental performance continually, and to implement a systematic approach to setting environmental objectives and targets, to achieving these and to demonstrating that they have been achieved. (International Organization for Standardization, 2011)

2) Proactive Corporate Environmental Management

It is the final stage of the corporate environmental management whereby environmental concerns becomes the key component of an organizational business strategy. Environmental management are successfully integrated into all planning activities and this will lead to sustainable competitive advantage of an organization. The products and process are also

modified to incorporate suppliers, therefore driving the positive environmental changes down the supply chain. (Jabbour, 2010)

3) Coercive Pressure

This pressure occurs as a result of external pressures from other organization and also the society. Basically, it comes from political, law and regulation pressure. (DiMaggio & Powell, 1983)

4) Normative Pressure

This pressure usually comes from professional network and education. Firm may tries to comply with the norm imposed by industrial association or the public. (DiMaggio & Powell, 1983)

5) Mimetic Pressure

The mimetic behavior happens when a firm tries to model itself on other successful organization. This occurs when there is uncertainty within a particular environment, for example, when there is no appropriate guideline for the firm to refer. (DiMaggio & Powell, 1983)

6) Ethical Motivation

Ethical motivation is about the right thing to do in a particular environment, this may stems from the awareness, behavioral intention and also willingness to perform of a particular party. (Paulraj, 2008)

7) Learning Capacity

Learning capacity means the organizational capability to learn continuously and to make intelligent decisions. The ability to adapt and leverage knowledge is the result of the learning process (Vera & Crossan, 2003).

1.9 Organization of the thesis

This study is structured in five chapters. The goal of this thesis is to investigate the factors that drive a firm's proactive corporate environmental management. The research is done among the ISO 14001 certified companies in Malaysia.

Chapter one generally introduces the thesis and detailed the aspects that are explored in the study and also gives a view of the structure of the thesis through the problem statements, research questions and research objectives.

Chapter two is a literature review discovering the previous study about the interest of this research.

Chapter three reports the detailed methodology about how this study is going to be conducted and the expected finding, including the conceptual framework, hypotheses development, questionnaire design and the technique used to analyze the data

Chapter four covers the main findings of this research. It shows the results and provides the profile of the respondent.

Chapter five explained the nature of the results from findings, the limitation in this research, the contribution, the recommendation for future research and also the conclusion for this research.

CHAPTER 2 LITERATURE REVIEW

2.1 Introduction

All previous literature that has been studied will be presented in this chapter. Therefore this chapter will provide an overview of literature on corporate environmental management, external pressure, internal pressure, firms characteristics and the underlying theory.

2.2 Corporate Environmental Management (CEM)

There are various studies in the past about corporate environmental management (CEM), researchers have examined various factors that motivate CEM although there is no clear evidence on which is the most influential driver.

There are studies concentrating on the external factors that motivate environmental management, for example the government regulation and competitive forces from the competitors (Christmann, 2000; Dean & Brown, 1995; Delmas, 2002; Hart, 1995; Rugman & Verbeke, 1997). Lawrence and Morell (1995) monitor the motivation of environmental management from the perspective of NGO (Non-governmental organization) pressures. Besides government regulatory pressure, customer pressure, shareholder pressure, neighborhood and community group pressure are also positively influencing the environment formulation strategy. (Henriques & Sadorsky, 1996)

Various studies have been concentrated on internal forces that drives a firm's environmental management practices, for instance, the values of leadership (Egri & Herman, 2000), the corporate environmental strategy orientation and learning capacity (Liu et al., 2010), institutional context and design of the firm (Sharma, 2000; Sharma, Pablo, & Vredenburg, 1999),

firm's economic opportunities and ethical motivations (Tutore, 2010), learning in organizational level (Marcus & Nichols, 1999) and also managerial attitudes in a corporate sector (Khanna & Speir, 2007).

Other than the internal and external drivers, researchers also examined other factors that motivate corporate environmental management, for example the firm's size, firm's ownership status and firm's financial standing. According to Henriques & Sadosky (1996), firms operated in the manufacturing sector such as natural resource sector are more likely to generate environmental management strategy compared to firms operated in the service sector. Gray & Deily (1996) studied the individual steel plant and found out that larger plants has less willingness to compliant with the air pollution regulations and different in firm characteristics possess little effect on compliance decisions. A firm's financial status may also influence their environmental practice as the environmental behavior will be modified when there are incentives provided by financial market (Gottzman & Kessler, 1998; Konar & Cohen, 1997).

In Malaysia, a few studies have been done on the impact of environmental management system and ISO 14001 on firms' performance (Goh Eng, Suhaiza, & Nabsiah Abd, 2006; Joyce Koe Hwee, 2009). Sumiani, Haslina & Lehman (2007) studied the environment reporting practices in Malaysia and found out that the level of the environment information disclosure in Malaysian corporate was rather low. Tarig Khidir, Suhaiza, & Krishnaswamy (2010) examined the drivers of green purchasing adoption among Malaysian manufacturing firms and the results showed that although Malaysian manufacturing firms have high sense of social responsibility, the firms were motivated by regulation and customer pressure to gain business benefits and were not motivated by the sense of social responsibility in the internal organization. There is lack of analysis regarding driving mechanism of corporate environmental management in Malaysia

firms, especially for those proactive environmental activities, therefore, there are very few references of domestic studies in Malaysia firm. This is because proactive corporate environmental management is a fresh concept for most Malaysian companies. In order to have a preliminary insight in this area, this study is conducted to find out the proactive corporate management level in Malaysia's firms and the drivers that influence the firms in Malaysia to proactively engage in environmental management.

2.3 Institutional Theory

Previous studies on the drivers that affect environmental management in firm had provided a clear picture for better perception on the case of Malaysian firms. In this research paper, institutional theory was chosen to explain the drivers of CEM. Institutional theory stressed on the pressure of organizational outside social forces and it is the advantage of this theory to find out the reason for the phenomenon of the alarming homogeneity of organizational practices in a certain environment (DiMaggio & Powell, 1983). The process of legitimation is not only strategic, but also institutional in Nature, institutional theory stated that it is the external institutions that create and interpenetrate every aspect of the organizations (Suchman, 1995).

The process of isomorphism is used to describe how the environment could force a unit of population in a same environment to be similar to each other, isomorphism (competitive and institutional) can be achieved through three different mechanism, which is coercive, mimetic and normative isomorphism (DiMaggio & Powell, 1983).

DiMaggio & Powell (1983) stated that coercive isomorphism occurs due to external pressures from other organizations and society at large. It basically comes from political pressure,

public, law and regulation. The pressure may be in the form of forces or persuasion to join the collusion.

Mimetic behavior occurs as a reaction to uncertainty within an environment. Organization will model itself on other successful organizations, a mimetic behavior, when there is uncertain environment, such as no appropriate guideline and reference (DiMaggio & Powell, 1983).

According to DiMaggio & Powell (1983), normative isomorphism stems primarily from professionalization, the collective struggle of members of an occupation to define the conditions and methods of their work. Education and professional networks are the two influential factors leading to isomorphism.

Institutional theory started to concentrate on how organization create general agreement on the rising environmental problems and issues, it also shows the approach on what is 'environmentally sound' practices could be developed and diffused (Jennings & Zandbergen, 1995). Institutional pressures play an important role in determining corporate environmental practices as social-political realm, public pressures, government regulations and interest group expectations are essential drivers for environmental strategy. According to Jennings & Zandbergen (1995), communities tend to be centered in an organizational fields. The literatures regarding coercive, normative and mimetic pressure are further elaborated in section 2.4.

2.4 External institutional pressures

Institutional factors identified by Hoffman (2001) were used in this study, this is because those driving mechanism shows a stronger effect on corporate environmental practices. The factors include the coercive pressure from the firms that hold mandatory power, normative

pressure from the public and industrial association, and also mimetic pressure from the competitors in the same sector. The examples of the studies are shown below.

2.4.1 Coercive pressure

In the past, government regulations were believed to be the dominant driving mechanism of CEM compare to other external factors. Government agencies are the one to enforce regulations, therefore they have coercive power on organization. A firm's environmental strategies are imposed coercively by environmental sanctions, as in the case of mandatory emission standards (Delmas, 2002). Government regulation and enforcement actions were found to be one of the most essential factors that affect a firm's decision making regarding environmental strategy (Henriques & Sadorsky, 1996).

There are various studies on the relationship between government regulation and environmental practices in different sector. Stafford (2002) studied the effect of a United States Environmental Protection Agency (USEPA) enforcement protocol on facility compliance of hazardous waste requirements, the violations were found to decrease along with the penalty change but the decrease appeared small relative to the increase of recommended penalty levels. Reijnders (2003) observed the regulatory influence on cleaner production and found that regulation by permits according to adequate law and negotiated agreements might act as more effective instruments. Similarly, Evangelinos & Oku (2006) assessed the regulatory and environmental problems of mining operations in the Cyclades, Greece. Mendivil, Fischer, & Hungerbuhler (2005) presented a systematic approach for the introduction of technology evolution, market and regulations affecting the past and future environmental performance of chemical manufacturers in Switzerland.

Beside the externally regulative driver, market actors and a firm's surrounding community, are playing more and more active roles for environmental issues (Chen & Soye, 2003). Economic studies recently started to examine the effects of non-regulatory external factors on CEM. By interacting with the suppliers and customers, manufacturers could potentially find more effective solutions to deal with environmental challenges (Prakash & Potoski, 2006; Vachon & Klassen, 2006). Zhu, Sarkis, & Lai (2007) found that market pressure has become a strong driver for Chinese auto companies to adopt green supply chain management. Zhang et al. (2008) pointed out that pressures from supply chain, customers and communities but not from the regulatory system played positive roles on CEM in a relatively developed area. Several other studies have shown that many consumers would prefer to choose environment-friendly products (Bermmer, 1989; Weber, 1990). Wen and Chang (1998) viewed the market demand as a great power for better CEM in Taiwan. Gunningham, Kagan, & Thornton (2003) explicitly explored the effect of community pressure on CEM. Henriques and Sadosky (1996) monitored the effect of community pressure due to self-reporting on decisions of Canadian firms to carry out an environmental plan. Becker (2004) tested whether community characteristics help explain the level of expenditures for pollution abatement in manufacturing plants of the US. The estimations revealed that the community characteristics significantly affected regulatory interventions and the facility's environmental performance.

2.4.2 Normative Pressure

Normative pressure results from norms defined by institutions like industrial associations. Behaviors that comply with the norm legitimize the firm (Palmer, Jennings, & Zhou, 1993). The public may impose normative pressure on companies via environmental activism or filing

citizen's lawsuits. Previous studies found that a company's decisions of environmental practices are influenced by the desire to manage the relationships with the public. Henriques and Sadorsky (1996) surveyed 700 firms in 1992 and found that the local community put pressure on the firms and motivates them to implement environmental plan. Florida & Davison (2001) indicated that the adoption of the pollution prevention initiatives was positively correlated to the firms' engagement with the surrounding communities. A survey of ISO 14001 certified companies across 15 countries showed that one of the strongest motivating factors for the certification was the desire to be a good neighbor (Raines, 2002). Normative pressure also comes from professional networking such as industrial associations (King & Lenox, 2001). Although industrial associations appear to be still weak in Malaysia, their influences on corporate proactive environmental practices bear a test. Frequency of the public complaints and the influence of industrial associations are used to represent the normative pressures in this study.

2.4.3 Mimetic Pressure

Firms may also show mimetic behavior during the uncertainty. For example, multinational company (MNC) subsidiaries may easily mimic the practices in parent company. This is because MNC is viewed as important agents in the diffusion of practices, the host company are responsible in transmitting knowledge and strategy to their subsidiaries (Arias & Guillen, 1998)

Besides that, firms may also practice environmental strategy in order to keep a comparative competence; they are likely to mimic the practices of leading companies in their sector. In order to measure the strength of mimetic pressure, the overall level of environmental management is used as an indicator for measurement. Liu et al. (2010) found out that there is a

positive relation between mimetic pressure and firms' proactive corporate environmental management. The finding shows that organizations tend to compete with their competitor in order to achieve sustainable competitive advantage, they are afraid of losing in the market factor.

2.5 Resource-Based Theory

Besides external pressure, in order to have an understanding of how a firm achieve sustainable competitive advantage, resource-based theory has been developed. While institutional theory looks at the external pressure, resource-based theory examines the firm's internal resource or capability. Firm resources that are not easily copied by other firm or competitor will provide a sustainable competitive advantage for that firm. (Barney & Arikan, 2005). Firms resources are difficult to transfer and duplicated by others because they include financial asset and intangible asset, for example the employees' and managers' skills, and also the ability to complete some value-added tasks, these are accumulated through experience and learning process (Hart, 1995). Numerous researches have shown the positive relationship between a firm's internal capability and the implementation or adoption of environmental management system. Darnell & Edwards (2006) found out that resource or capability of a firm assists in the adoption process and is complementary to an environmental management system.

According to Hart (1995), a firm that uses the internal capabilities to adopt environmental strategies can achieve a competitive advantage and increase the management efficiency and reputation. Financial resources and management capabilities is very important to obtain competitive advantages. Therefore, firms that can accumulate resources to support unique capabilities will be able to enjoy a sustainable competitive advantage (Russo & Fouts, 1997; Christmann, 2000). The literature about the internal capabilities examined in this study will be discussed in section 2.6.

2.6 Internal factors

Institutional theory inspects the external factors of the organizations that determined the strategic options. Besides external factor, according to Yang & Zhou (2005), internal drivers in

an organization play a more important role to the adoption and implementation of ISO14001 environmental standards. The internal factors also exist and it may play important roles for a firm proactive environmental practices (Liu et al., 2010). Therefore, in this research design, four internal organizational factors, managerial attitudes, economic opportunities, ethical motivation and learning capacity were added to combine the explanation of proactive corporate environmental management and provide a better understanding of the firm's preference in their effort and strategy to adopt proactive corporate environmental management. The literature of the four internal factors studied will be discussed below.

2.6.1 Managerial attitudes

Organizational response to environmental performance can be influenced by internal forces within a firm, such as the managerial attitudes towards environmental responsibility (Gunningham et al., 2003). Managers have a vital responsibility in filtering, interpreting and prioritizing the indications from a firm's external environment and managers' attitudes and commitment play a very prominent role in facilitate or obstruct a firm's proactive environmental management (Nash, 2000). Managerial attitudes and knowledge towards the environment were the main factors that contribute to a firm's preferences for pollution prevention activities (Cordano & Frieze, 2000). Khanna & Speir (2007) found out that managerial attitudes and moral responsibility towards environment were strong determinants that influence an organization to adopt environmental management practices and implement pollution prevention activities.

2.6.2 Economic opportunities

According to the literature, economic opportunities were the other important internal drivers for a firm that could influence the decision to adopt proactive corporate environmental management strategy (Benito & Benito, 2006). For the firms that view profit and money as most important element, then economic opportunities will be consider effective factors as they can reduce cost or generate money from green practices. Firms can cut cost through various activities such as reducing the cost of input and waste or through effective life cycle analysis, profit can also be gained through the sales of waste disposal, or when the corporate image and product quality increased (Porter & Van Der Linde, 1995).

2.6.3 Ethical Motivation

Ethical is another driver for adoption of green proactive strategy (Benito & Benito, 2006). Ethical forces promote the ‘right thing to do’, it is believes to linked to larger target of sustainability, sometimes far from profit orientation (Paulraj, 2008). This factor came from the awareness, behavioral intention and also willingness of the entire organization to adopt voluntary approach of sustainable environmental management. Awareness of environment and voluntary adoption may post a significant effect to the engagement of firm environmental initiatives (Liu et al., 2010). Liu et al. (2010) also found out that the willingness of adopting environmental approach shows obvious effects to environmental management level.

2.6.4 Learning capacity

Learning capacity of a firm is another determinant for proactive CEM, it can be treated as an indicator for firms to measure its ability to practice and learn new things. Previous study proved

that the abilities of the members in an organization is highly related to the improvement of environmental performance in that particular organization (Hart, 1995). Job training, professional education and self learning can further enhance the ability of the employee to accept and implement new environmental strategy. The employees' education level can form a basis for the firm's learning capacity whereas internal training provided can further promote the firm's learning capacity of environmental management (Yang & Zhou, 2005). With internal organization training, the environmental management skills will be improved and study showed that internal training showed an effect on an organization environmental practice (Liu et al., 2010)

2.7 Firm Characteristics

Besides the external and internal driving mechanism, this study adds on by examining the relationship between firm characteristics and the proactive environmental management. Previous studies have shown that firm's attributes, such as industry sector, plant size, experience level of the firm and ownership status would have an effect on corporate environmental management (Zhang et al., 2008; Bowen, 2002; Dasgupta, Hettige & Wheeler, 1997; Arora & Cason, 1996). The firm characteristics in this study are firm size, firm age, firm ownership status and type of industrial sector. These variables were chose because previous researchers have found out that these variables can cause important effect on firm environmental practices. According to Bowen (2002), firm size is highly correlated with firm environmental initiatives, larger firms will more likely to adopt voluntary environmental strategy as a result of larger amount of resource and more visible to the society. Different industrial sectors also create different influence on CEM. Compare with lower environmental impact industry, such as textile industry, the higher environmental impact industry, such as chemical industry will have a higher level on green corporate environmental strategy (Banerjee, 2001). Previous study showed that a significant positive relation of firm age was found on the likelihood of carrying out a

process innovation, such as environmental management system implementation (Wagner, 2007). Besides that, firms attribute such as public ownership or multinational status may cause difference in their environmental behavior (Khanna & Speir, 2007).

2.8 Summary

The above-mentioned literature has provided useful and detail understanding on corporate environmental management. From the previous studies, it can be seen that there is a significant relationship between these variables and the firm environmental management. However, there is lack of comprehensive analysis of various matters explaining environmental behaviors of Malaysian firms, especially regarding the proactive corporate environment management activities and this concept is consider new for those Malaysian organization. Therefore, this study provides an analysis on the driving mechanism (internal and external) for Malaysian firms to proactively involve in corporate environmental activities. Furthermore, this paper makes a more comprehensive approach by including more factors to be tested such as firm characteristics.

CHAPTER 3 METHODOLOGY

3.1 Introduction

In this chapter, the details of the methods used to conduct this study are elaborated. Therefore this chapter is consisting of the research design, respondent, research framework, hypothesis development, instruments, questionnaire design, data collection, data analysis technique and also the pilot test.

3.2 Research Design

This is a descriptive study using quantitative design method and this study is conducted in Malaysia. A descriptive study is defined as a typed of research designed to describe the characteristics of a population of a phenomenon (Zikmund, 2003). It is a correlation study because this study delineated the relationship between external pressures, internal drivers and firm characteristics towards the level of proactive corporate environmental management of a firm respectively.

In order to obtain the primary data, which are of quantitative data, a survey questionnaire is developed. The results are then further analyzed through Predictive Analytics SoftWare (PASW) statistics software version 18. Secondary data of this study was obtained through internet, books and university library databases to have a more understanding on research topic and to find out what has been done by the previous researchers.

3.3 Respondent

The unit of analysis of this study is the individual firm. The respondents of this study consist of Malaysian manufacturing firms that have obtained the ISO 14001 environmental management system certification. These types of firms are selected because they are believed to have a higher environmental awareness level and they are expected to have adopted environmental management in their organization. The new list of ISO 14001 certified firms in Malaysia are obtained through the Federation of Malaysian Manufacturers (FMM) directory (2010). The list of ISO 14001 certified firms is provided in APPENDIX A, currently there are 377 firms with ISO 14001 certification in Malaysia. 377 sets of questionnaire have been distributed to all the ISO 14001 certified companies, the returned answered questionnaires are 87, which contributed to 23% of respondents. According to the rule of thumb, sample size between 30 and 500 is effective depending on the type of sampling design used and the research question investigated.

3.4 Data Collection

The survey was done through mail questionnaire, and the responses received from 1 June 2011 through 31 July 2011 were accepted for this paper. Mail questionnaire was chosen because according to Sekaran (2010), this method of survey can cover a wide geographical area and respondents can complete the questionnaires at their own convenience. Refer APPENDIX B for the questionnaire.

3.5 Research Framework

This study covers 11 independent variables and one dependent variable, the research framework is shown in figure 3.1. The set of independent variables in Figure 3.1 is partially supported by Liu et al. (2010), the researchers highlighted that firm external environments (coercive, normative and mimetic pressure) and some internal factors (environmental strategy orientation and learning capacity) are important in influencing a firm decision in adopting proactive corporate environmental management practice. Tutore (2010) identified that external driver (regulation and stakeholder's pressure) and internal drivers (economic opportunities and ethical motivation) are important in corporate environmental proactivity. In order to have a more comprehensive resource-based view, this study has added an additional construct, the managerial attitudes. Besides that, this study adds on by studying whether firm characteristics are significantly effecting proactive corporate environmental management.

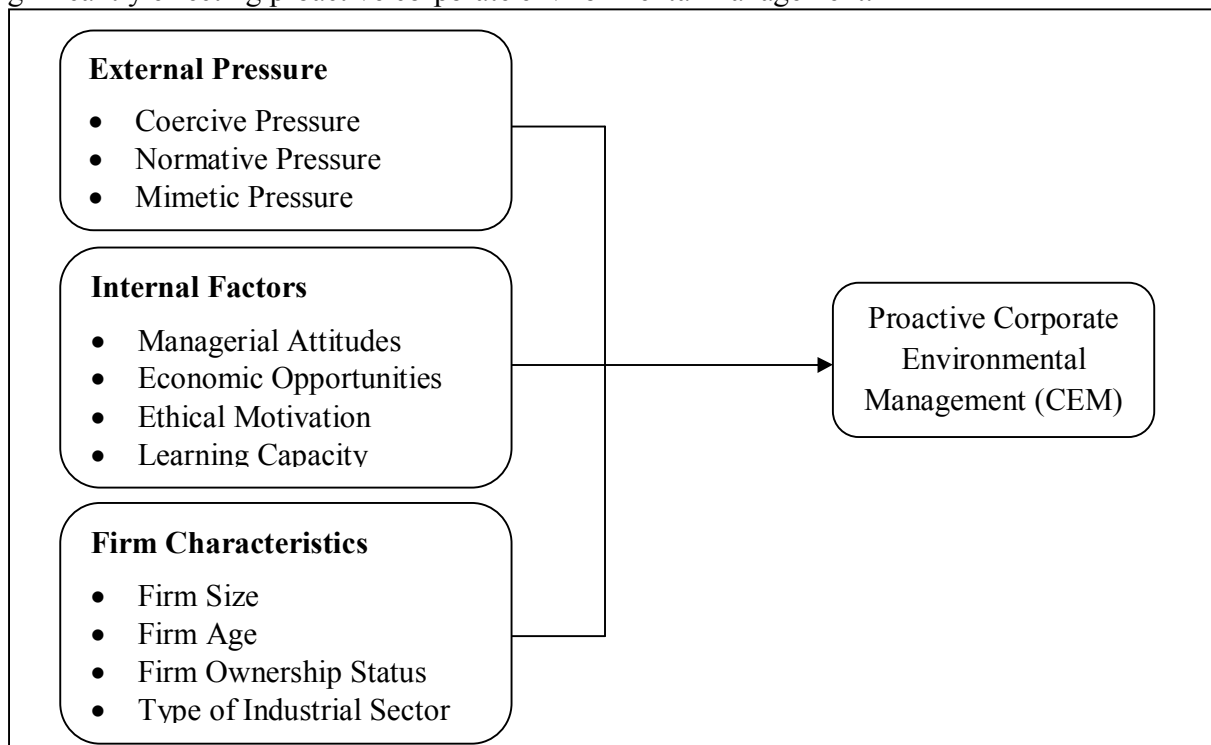


Figure 3.1: Research Framework